



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

117

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/801,504	03/15/2004	Bradley J. Booth	P15227X	1815
7590 12/11/2007 Grossman, Tucker, Perreault & Pfleger, PLLC c/o Intellevate P.O. Box 52050 Minneapolis, MN 55402			EXAMINER DSOUZA, JOSEPH FRANCIS A	
			ART UNIT 2611	PAPER NUMBER
			MAIL DATE 12/11/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/801,504

Applicant(s)

BOOTH ET AL.

Examiner

Adolf DSouza

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 34 is/are pending in the application.
- 4a) Of the above claim(s) 10, 19, 20, 22, 26 - 28, 32 - 34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 11-18, 21, 23-25, 29-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

Response to Arguments

1. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

Argument: Applicant amended claim 1 to add new limitations and then argued that the references did not disclose those.

Response: Examiner is introducing a new reference Kelly et al. (US 5,907,553) to address those limitations.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 4 - 7, 13, 15, 18, 21, 23, 29 – 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over **IEEE 802.3** (which Applicant has provided in his IDS in the parent application 10,291,017) in view of **Feuerstraeter** (US 6,169,729) and further in view of **Kelley et al.** (US 5,907,553).

Regarding claim 1, IEEE 802.3 discloses a device comprising:

a data transceiver adapted to be coupled to one or more data lanes of a device-to-device interconnection (DDI) (page 698, Figure 28-1; page 965, Figure 36-2; wherein

the transceiver is formed by the transmit and receive functions shown and the data lanes are the MDI and GMII interfaces);

a negotiation section comprising (page 698, Fig. 28-1 "Auto-Negotiation Functions"):

logic to detect 8B/10B code groups on each data lane of the DDI (page 966, section 36.2.3 - 36.2.4.1; page 967, Fig. 36-3, element 8B/10B decoder);

and configuration logic to selectively configure the data transceiver to transmit and receive data on the DDI according to a data transmission mode based upon the detected 8B/10B code groups (page 698, section 28.1.1, especially 2nd paragraph, 1st 2 lines which states "the auto-negotiation section provides the means to exchange information and configure both devices).

IEEE 802.3 does not disclose a base page followed by a next page and that in the absence of a base page, logic capable of identifying a legacy device that not support autonegotiation.

In the same field of endeavor, however, Feuerstraeter discloses:

logic to transmit a Base Page message in the DDI (Fig. 4, element 402; column 3, lines 46 - 52);

and logic to transmit a Next Page message in the DDI following transmission of the Base Page message, the Next Page message specifying one or more available data transmission modes for transmitting the Ethernet frames in the DDI (Fig. 4, element

402; column 3, lines 46 – 52; column 12, lines 43 – 55, especially lines 53 – 55; which indicate the transmission mode).

Therefore it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to use the method, as taught by Feuerstraeter, in the system of IEEE 802.3 because this would allow the network connection to be determined, as disclosed by Feuerstraeter (column 3, lines 46 – 52).

In the same field of endeavor, however, Kelly discloses in the absence of a Base Page Message, said logic capable of identifying at least one legacy device that does not support autonegotiation, said at least one legacy device including at least one of 10 gigabit attachment unit interface (XAUI) or at least one of gigabit Ethernet transmission over fiber (1000BASE-X) and serial gigabit media independent interface (SGMII) (column 4, lines 1 – 20; column 4, line 52 - column 5, line 2; wherein the parallel detection method that Applicant described in the Specification [paragraph 52] is used in the manner disclosed by Kelly).

Therefore it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to use the method, as taught by Kelly, in the system of IEEE 802.3 because this would allow communication between devices whether a base page was present or not.

Regarding claim 2, IEEE 802.3 discloses the negotiation section further comprises logic to selectively configure the data transceiver to transmit and receive data on the DDI according to a 1000BASE-X data transmission mode in response to detecting 8B/10B code groups on a single data lane (page 962, section 36; wherein the 2nd paragraph states that 8B/10B coding is used and the 8B/10B codes are decoded as in claim 1).

Regarding claim 4, IEEE 802.3 discloses the negotiation section further comprises logic to selectively configure the data transceiver to transmit and receive data on the DDI according to an SGMII data transmission mode in response to detecting 8B/10B code groups on a single data lane (page 965, section 36.2.1 - page 966, section 36.2.4; wherein the SGMII interface is the GMII interface with S just indicating serial transmission).

Claims 5 and 6 are similarly analyzed as claims 2 and 4 respectively with the detection being done for several data lanes.

Regarding claim 7, IEEE 802.3 discloses the data transceiver is capable of operating in one or more data transmission modes (page 698, section 28.1.1, 3rd paragraph, last 3 lines; wherein the multiple transmission modes are the 10BASE-T, 100BASE-TX, ... modes), and wherein the negotiation circuit further comprises logic to transmit a link pulse signal on at least one data lane in the DDI during the negotiation period to identify the one or more data transmission modes (page 698, 2nd and 4th paragraphs; page 702, section 28.2.1.1).

Regarding claim 13, IEEE 802.3 discloses the data transceiver further comprises a physical medium attachment (PMA) section and a physical coding sublayer (PCS) corresponding to each of the plurality of data transmission modes (page 700, Fig. 28-2, elements PMA and PCS), and wherein the configuration logic comprises logic to enable the PMA and PCS sections associated with the selected data transmission mode (page 701, section 28.2, 1st 2 paragraphs).

Regarding claim 15, IEEE 802.3 discloses the data transceiver is capable of operating in one or more data transmission modes (page 698, section 28.1.1, 3rd paragraph, last 3 lines; wherein the multiple transmission modes are the 10BASE-T, 100BASE-TX, ... modes), and wherein the negotiation circuit further comprises logic to transmit a link pulse signal on at least one data lane in the DDI during the negotiation period to identify the one or more data transmission modes (page 698, 2nd and 4th paragraphs; page 702, section 28.2.1.1).

Regarding claim 18, IEEE 802.3 discloses the configuration logic comprises logic to selectively configure the data transceiver to transmit and receive data to a plurality of ports couple to the DDI in response to the link pulse signal (page 698, section 28.1.1, 3rd paragraph, last 3 lines; wherein the multiple transmission modes are the 10BASE-T, 100BASE-TX, ... mode; page 698, 2nd and 4th paragraphs; page 702, section 28.2.1.1; wherein the link pulse signal identifies the transmission mode).

Claim 21 is directed to method/steps of the same subject matter claimed in apparatus claim 1 and therefore, is rejected as explained in the rejection of claim 1 above.

Regarding claim 23, IEEE 802.3 discloses a system comprising:

a media access controller comprising a media independent interface (MII) (page 700, Fig. 28-2).

All other limitations of claim 23 are as analyzed in claim 1 above.

Regarding claim 29, IEEE 802.3 discloses a system comprising:

a physical layer communication device to transmit data between a transmission medium and a media independent interface (MII) (page 700, Fig. 28-2; wherein the physical layer device is shown as PHY);

and a communication device comprising: a data transceiver adapted to be coupled to one or more lanes of a DDI, the data transceiver being coupled to the MII to transmit data between the MII and the DDI (page 700, Fig. 28-2; wherein the transceiver is shown as the PHY layer device which is coupled to the MII).

All other limitations of claim 29 are as analyzed in claim 1 above.

Regarding claim 30, IEEE 802.3 discloses the physical layer communication device is adapted to transmit data between the MII and a fiber optic cable (page 962, 1st paragraph, 5th line).

Regarding claim 31, IEEE 802.3 discloses the physical layer communication device is adapted to transmit data between the MII and a twisted wire pair cable (page 698, section 28 Title; page 700, Fig. 28-2).

3. Claims 3, 8 – 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over **IEEE 802.3** (which Applicant has provided in his IDS in the parent application 10,291,017) in view of **Feuerstraeter** (US 6,169,729) and further in view of **Kelley et al.** (US 5,907,553 and **IEEE 2002** (May 1, 2002, which Applicant has provided in his IDS in the parent application 10,291,017).

Regarding claim 3, IEEE 802.3 discloses the negotiation section further comprises logic to selectively configure the data transceiver to transmit and receive data on the DDI in response to detecting 8B/10B code groups on four data lanes.

IEEE 802.3 does not disclose that the transmission mode is XAUI data transmission mode.

In the same field of endeavor, however, IEEE 2002 discloses an XAUI data transmission mode (page 296, Fig. 47-1; section 47.1, lines 3 - 51).

Therefore it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to use the method, as taught by IEEE 2002, in the system of

IEEE 802.3 because this would allow the XAUI data transmission mode (10 Gigabit) to be implemented, as disclosed by IEEE 2002.

Regarding claim 8, IEEE 802.3 does not disclose the data transceiver circuit is adapted to be coupled to at least one differential pair corresponding to at least one of the data lanes.

In the same field of endeavor, however, IEEE 2002 discloses the data transceiver circuit is adapted to be coupled to at least one differential pair corresponding to at least one of the data lanes (page 299, paragraph 47.3.1 - 47.3.2).

Therefore it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to use the method, as taught by IEEE 2002, in the system of IEEE 802.3 because this would allow the advantages of differential signaling to be used, as is well known in the art.

Regarding claim 9, IEEE 802.3 discloses the DDI is formed in a printed circuit board comprising a pair of copper traces for each differential pair (page 962, section 36.1.2, line (e); wherein the differential pair is as analyzed in claim 8 above).

4. Claim 11, 12, 14, 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over **IEEE 802.3** (which Applicant has provided in his IDS in the parent application 10,291,017) in view of **Feuerstraeter** (US 6,169,729) and further in view of **Kelley et al.** (US 5,907,553) and **Chang et al.** (US 20020091884).

Regarding claim 11, IEEE 802.3 does not disclose a transmission mode for a single data lane and a transmission mode for four data lanes.

In the same field of endeavor, however, Feuerstraeter discloses Next Page message comprises at least a first bit indicating an availability of a first data transmission mode using a single data lane in the DDI (column 14, lines 27 – 49; wherein the single data lane is interpreted as part of the full duplex system 800).

Therefore it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to use the method, as taught by Feuerstraeter, in the system of IEEE 802.3 because this would allow the transmission mode to be determined, as is well known in the art.

In the same field of endeavor, however, Chang discloses a second bit indicating an availability of a second data transmission mode using four data lanes (Fig. 1; paragraphs 111 - 113).

Therefore it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to use the method, as taught by Chang, in the system of IEEE 802.3 because this would allow the transmission mode to be determined for multiple lanes, as is well known in the art.

Regarding claim 12, IEEE 802.3 discloses the Next Page message comprises at least a first bit indicating an availability of a 1000BASE-X data transmission mode (page 962, section 36.1.1).

IEEE 802.3 does not disclose the XAUI data transmission mode.

In the same field of endeavor, however, IEEE 2002 discloses a second bit indicating a XAUI data transmission mode (page 296) and a third bit indicating a 10 Gbps data transmission mode over a single data lane (page 310).

Therefore it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to use the method, as taught by IEEE 2002, in the system of IEEE 802.3 because this would allow multiple transmission modes, as is well known in the art.

Regarding claim 14, IEEE 802.3 discloses at least one of 1000BASE-X and serial gigabit media independent interface (SGMII) (page 962, which discloses the 1000BASE-X).

IEEE 802.3 does not disclose XAUI mode.

In the same field of endeavor, however, IEEE 2002 discloses the configuration logic comprises logic to selectively configure the data transceiver circuit to transmit and receive data on the DDI in a data transmission mode according to either 10 gigabit attachment unit interface (XAUI) (page 296, page 310).

Therefore it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to use the method, as taught by IEEE 2002, in the system of

IEEE 802.3 because this would allow multiple transmission modes, as is well known in the art.

Regarding claim 16, IEEE 802.3 does not disclose the data transceiver circuit is adapted to be coupled to at least one differential pair corresponding to at least one of the data lanes.

In the same field of endeavor, however, IEEE 2002 discloses the data transceiver circuit is adapted to be coupled to at least one differential pair corresponding to at least one of the data lanes (page 299, paragraph 47.3.1 - 47.3.2).

Therefore it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to use the method, as taught by IEEE 2002, in the system of IEEE 802.3 because this would allow the advantages of differential signaling to be used, as is well known in the art.

Regarding claim 17, IEEE 802.3 discloses the DDI is formed in a printed circuit board comprising a pair of copper traces for each differential pair (page 962, section 36.1.2, line (e); wherein the differential pair is as analyzed in claim 8 above).

5. Claims 24 – 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over **IEEE 802.3** (which Applicant has provided in his IDS in the parent application

10,291,017) in view of **Feuerstraeter** (US 6,169,729) and further in view of **Kelley et al.** (US 5,907,553) and **Liang** (US 5,889,776).

Regarding claim 24, IEEE 802.3 does not disclose the switch fabric coupled to the MAC.

In the same field of endeavor, Liang discloses the system further comprises a switch fabric coupled to the MAC (column 3, lines 49 – 54; wherein the switch fabric would be coupled to the MAC if the MAC were in the switch fabric).

Therefore it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to use the method, as taught by Liang, in the system of IEEE 802.3 because this would allow the MAC to control the switch fabric to disengage the link when needed, as disclosed by Liang.

Regarding claim 25, IEEE 802.3 does not disclose a packet classification device coupled to the MAC.

In the same field of endeavor, Liang discloses the system further comprises a packet classification device coupled to the MAC (column 9, lines 28 - 29).

Therefore it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to use the method, as taught by Liang, in the system of IEEE 802.3 because this would allow the MAC to process the packets, as is well known in the art.

Other Prior Art Cited

6. The prior art made of record and not relied upon is considered pertinent to the applicant's disclosure.

The following patents are cited to further show the state of the art with respect to Ethernet systems:

Wakeley et al. (US 6,198,727) discloses a Method and apparatus for providing 10Base-T/100Base-TX link assurance.

Azadet et al. (US 20010034729) discloses Simple link protocol providing low overhead coding for LAN serial and WDM solutions.

Andra et al. (US 6,349,331) discloses multiple channel communication system with shared autonegotiation controller.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adolf DSouza whose telephone number is 571-272-1043. The examiner can normally be reached on Monday through Friday from 8:00 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Payne can be reached on 571-272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

Application/Control Number:
10/801,504
Art Unit: 2611


Page 16

USPTO Customer Service Representative or access to the automated information
system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



AD

Adolf DSouza
Examiner
Art Unit 2611



DAVID C. PAYNE
SUPERVISORY PATENT EXAMINER